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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,150	05/03/2006	Jun Seok Park	3449-0619PUS1	8811

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EXAMINER
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PHAM, THANH V

ART UNIT	PAPER NUMBER
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2894

NOTIFICATION DATE	DELIVERY MODE
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04/08/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,150	<b>Applicant(s)</b> PARK, JUN SEOK	
	<b>Examiner</b> THANH V. PHAM	<b>Art Unit</b> 2894	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 February 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 49-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Amendment***

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 49-56, 58, 60-66, 68 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrah US 6,936,855 B1 in combination with Arakawa et al. US 5,994,212.

Re claim **49**, the Harrah reference discloses a light emitting device package in figs. 2, comprising:

- a base 60/61 having an entire top surface that is flat;
- a light emitting device 15/16 directly on the flat top surface of the base 60/61;
- an electrical circuit layer 40 including at least one end portion placed adjacent to the light emitting device 15/16;
- an electrode layer (not shown) disposed above a tip portion of the at least one end portion (40Z/40X/40AD/40AB) of the electrical circuit layer 40; and
- a lens 70/71 covering the light emitting device 15/16 and the electrode layer.

While focus on the arrangement of the LED on the lead frame, the Harrah reference does not disclose clearly the electrode layer disposed above a tip portion (40Z/40X/40AD/40AB) of the at least one end portion of the electrical circuit layer 40.

However, the Arakawa et al. reference discloses in Fig. 2 and, e.g., 1:12-15

A recently developed lead frame includes stacked plate layers, which are formed by plating a plate-shaped body of copper (Cu) with nickel as underplate and plating the nickel-plated body with palladium (Pd) and further with gold (Au).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the lead frame/electrical circuit layer of Harrah with the lead frame of Arakawa et al. because the lead frame of Arakawa et al. would provide an electrode layer/bonding area to the structure of Harrah from “being exposed in the wire bonding procedure” as taught by Arakawa et al. (col. 6, lines 55+).

Re claim 50, with this combination, the light emitting device package of claim **49**, wherein an entire bottom surface of the electrode layer (Arakawa et al.’s 12) is in contact with the electrical circuit layer (Harrah’s 40 converted to/substituted by Arakawa et al.’s 9/10/11 of 1).

Re claim 51, in this combination, the light emitting device package of claim **49**, wherein the electrode layer (Harrah’s 40Z/40X/40AD/40AB converted to/substituted by Arakawa et al.’s 12) is separated from the light emitting device (Harrah’s 15/16) and does not directly contact the light emitting device (Harrah’s 15/16).

Re claim 52, in this combination, the light emitting device package of claim **49**, wherein the lens (Harrah’s 70/71) is a molding which completely fills up any space between the light emitting device (Harrah’s 15/16) and the electrode layer (Harrah’s 40, 40Z/40X/40AD/40AB, converted to/substituted by Arakawa et al.’s 12 of 1).

Re claim 53, in this combination, the light emitting device package of claim **49**, wherein the entire electrode layer is encapsulated by the lens (Harrah’s 70/71).

Re claim 54, in this combination, the light emitting device package of claim **49**, further comprises an insulating layer (Harrah's 50) between the electrical circuit layer and the base.

Re claim 55, in this combination, the light emitting device package of claim **49**, wherein a top surface of the electrode layer is plated (Arakawa et al.'s 12 of 1).

Re claim 56, in this combination, the light emitting device package of claim **49**, wherein the base is made of a metal (Harrah's 60/61 and/or Arakawa et al.'s 9).

Re claim 58, in this combination, the light emitting device package of claim **49**, wherein the base has a hole (Harrah's figs. 1-2, e.g.).

Re claim 60, in this combination, the light emitting device package of claim **49**, further comprising a plating layer on the electrode layer (Harrah's 40Z/40X/40AD/40AB, converted to/substituted by Arakawa et al.'s 12 of 1).

Re claim **61**, limitations are the same as in claim **49** and considered the same.

Re claim 62, in the combination, the Harrah reference discloses not just one LED package but an array of LED package.

Re claims 63-66, 68 and 70, limitations are the same as in claims 50-53, 58 and 60, respectively, and considered the same.

3. Claims 57, 59, 67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over the above combination as applied to claims 49-56, 58, 60-66, 68 and 70 above, and further in view of Mazzochette et al. US Pub. 2004/0022433 (provided in previous rejection).

The combination discloses substantially all of the instant claimed invention.

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It does not disclose further comprising a heat sink disposed on a bottom surface of the base and the hole is in contact with a heat sink disposed on a bottom surface of the base.

The Mazzochette et al. reference discloses a light emitting device package, wherein the light emitting device package further comprising a heat sink that comes in contact with one surface of the metal base with a heat transfer material 16 embedded therein. Heat transfer material 16 of figs. 1, 4 and fig. 7, e.g., is attached underneath or "combined to" the metal base 11. The light emitting device package, in other variation, further comprises a heat sink 91 formed on the bottom surface of the metal base, combined to the metal base by a screw 95, fig. 9, e.g.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the combination's structure with Mazzochette et al.'s thermal connector, substituted for Harrah's heat spreader, and further provide the combination's structure a heat sink formed on the bottom surface of the metal base, combined to the metal base by a screw; because a heat sink formed on the bottom surface of the metal base, combined to the metal base by a screw would provide the combination structure with "heat flow [being] enhanced by thermal vias to the thermal connector pad" as taught in Mazzochette et al.'s abstract.

### ***Response to Arguments***

4. Applicant's arguments with respect to new sets of claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THANH V. PHAM whose telephone number is (571)272-1866. The examiner can normally be reached on M-T (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly D. Nguyen can be reached on 571-272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/THANH V. PHAM/  
Primary Examiner, Art Unit 2894